Remarks

I. Traverse of the Restriction Requirement

The Examiner has presented no Prima Facie case for the Restriction Requirement to various Species, instead stating only:

> "This application contains claims directed to the following patentably distinct species of the claimed invention:
> Species 1: Figures 3,2;
> Species 2: Figures 10, 12;
> Species 3: Figure 13;
> Species 4: Figures 14, 17;
> Species 5: Figure 18;
> Species 6: Figure 19;
> Species 7: Figure 20;
> Species 8: Figures 21, 22."

Moreover, applicants respectfully disagree with the statement of the Examiner that:

"Currently, no claims are considered generic."

Applicants respectfully submit that independent claim 1 reads on FIG. 2, FIG. 3, FIG. 10, FIG. 12, FIG. 13, FIG. 14, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21 and FIG. 22, and is thus a generic claim.

Applicants respectfully submit that independent claim 12 reads on FIG. 2, FIG. 3, FIG. 10, FIG. 12, FIG. 13, FIG. 14, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21 and FIG. 22, and is thus a generic claim.

Applicants respectfully submit that independent claim 23 reads on FIG. 2, FIG. 3, FIG. 10, FIG. 12, FIG. 13, FIG. 14, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21 and FIG. 22, and is thus a generic claim.

Applicants respectfully submit that independent claim 34 reads on FIG. 2, FIG. 3, FIG. 10, FIG. 12, FIG. 13, FIG. 14, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21 and FIG. 22, and is thus a generic claim.

Applicants respectfully submit that independent claim 47 reads on FIG. 2, FIG. 3, FIG. 10, FIG. 12, FIG. 13, FIG. 14, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21 and FIG. 22, and is thus a generic claim.

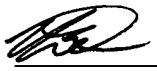
II. Amendment of the Claims

The claims have been amended to present the invention for examination in accordance with the Election of Species.

III. Conclusion

Applicants have responded to each item of the Restriction Requirement. Applicants have amended to present the invention for examination in accordance with the Election of Species. Applicants believe that the claims are in condition for allowance, and a Notice of Allowance is solicited.

Respectfully submitted,



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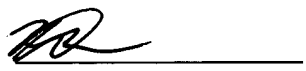
Date: 11-23-01



Mark Lauer

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Kenneth E. Knapp et al.		Ser. No:	09/500,380
Filing Date:	February 8, 2000	Examiner:	N. Monardes
Atty. Docket No:	RR-1645	GAU:	2652

For: NARROW TRACK POLE-TIPS FOR ELECTROMAGNETIC TRANSDUCERS

November 23, 2001

Box No Fee Amendment
Assistant Commissioner for Patents
Washington, D.C. 20231

Marked-Up Claims

The following Marked-Up Claims are submitted to explain an accompanying Amendment.

1. (Amended) A transducer comprising:

a plurality of solid layers, including a magnetically [permeable] soft loop substantially encircling an electrically conductive coil section and terminating in first and second magnetically [permeable] soft layers separated by an amagnetic gap layer, said second magnetically [permeable] soft layer composed of vacuum-deposited material and oriented substantially perpendicular to said amagnetic layer.

2. (Amended) The transducer of claim 1, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer, said width being less than about four hundred nanometers.

3. (Amended) The transducer of claim 1, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer, said width being not substantially greater than a distance between said magnetically [permeable] soft layers.

4. (Amended) The transducer of claim 1, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer and a length measured in a direction substantially perpendicular to said amagnetic layer, with said length being at least six times greater than said width.

5. (Amended) The transducer of claim 1, wherein said second magnetically [permeable] soft layer contains a refractory metal.

6. (Amended) The transducer of claim 1, wherein said second magnetically [permeable] soft layer contains material having a B_s higher than that of Permalloy.

7. (Amended) The transducer of claim 1, further comprising a third magnetically [permeable] soft layer disposed substantially parallel to said second magnetically [permeable] soft layer and separated from said second magnetically [permeable] soft layer with a second amagnetic layer.

8. (Amended) The transducer of claim 1, wherein said first magnetically [permeable] soft layer is substantially perpendicular to said second magnetically [permeable] soft layer.

9. (Amended) The transducer of claim 1, wherein said first magnetically [permeable] soft layer is substantially parallel to said second magnetically [permeable] soft layer.

10. (Amended) The transducer of claim 1, further comprising a magnetoresistive sensor layer disposed adjacent said second magnetically [permeable] soft layer and oriented substantially perpendicular to said second magnetically [permeable] soft layer.

12. (Amended) A transducer for an information storage system, the transducer comprising:

a plurality of solid layers, including a magnetically [permeable] soft loop substantially encircling an electrically conductive coil section and terminating in first and second sputtered magnetically [permeable] soft layers separated by an amagnetic gap layer, said first magnetically [permeable] soft layer being oriented substantially perpendicular to said second magnetically [permeable] soft layer.

13. (Amended) The transducer of claim 12, wherein said second magnetically [permeable] soft layer is substantially perpendicular to said amagnetic layer.

14. (Amended) The transducer of claim 12, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer, said width being less than about two hundred nanometers.

15. (Amended) The transducer of claim 12, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer that is not substantially greater than a thickness of said amagnetic layer.

16. (Amended) The transducer of claim 12, further comprising a third magnetically [permeable] soft layer adjoining said second magnetically [permeable] soft layer distal to said amagnetic layer, with said third magnetically [permeable] soft layer oriented substantially parallel to said amagnetic layer.

17. (Amended) The transducer of claim 12, wherein said second magnetically [permeable] soft layer contains material having a B_s higher than that of Permalloy.

18. (Amended) The transducer of claim 12, further comprising a third magnetically [permeable] soft layer disposed substantially parallel to said second magnetically [permeable] soft layer and separated from said second magnetically [permeable] soft layer with a second amagnetic layer.

19. (Amended) The transducer of claim 12, wherein said second magnetically [permeable] soft layer contains a refractory metal.

20. (Amended) The transducer of claim 12, further comprising a magnetoresistive sensor layer disposed adjacent said second magnetically [permeable] soft layer and oriented substantially perpendicular to said second magnetically [permeable] soft layer.

22. (Amended) The transducer of claim 12, further comprising an electroplated magnetically [permeable] soft layer disposed between said first and second sputtered magnetically [permeable] soft layers.

23. (Amended) A transducer for an information storage system, the transducer comprising:

a magnetically [permeable] soft loop substantially encircling an electrically conductive coil section and terminating adjacent a media-facing surface in first and second magnetically [permeable] soft layers separated by an amagnetic gap layer, wherein said second magnetically [permeable] soft layer has a growth morphology that is not substantially perpendicular to said amagnetic gap layer.

24. (Amended) The transducer of claim 23, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer, said width being less than about four hundred nanometers.

25. (Amended) The transducer of claim 23, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer that is not substantially greater than a thickness of said amagnetic layer.

26. (Amended) The transducer of claim 23, wherein said second magnetically [permeable] soft layer has a width measured in a direction substantially parallel to said amagnetic layer and a length measured in a direction substantially perpendicular to said amagnetic layer, with said length being at least six times greater than said width.

27. (Amended) The transducer of claim 23, wherein said second magnetically [permeable] soft layer consists essentially of sputtered material.

28. (Amended) The transducer of claim 23, wherein said second magnetically [permeable] soft layer contains material having a B_s higher than that of Permalloy.

29. (Amended) The transducer of claim 23, further comprising a third magnetically [permeable] soft layer disposed substantially parallel to said second magnetically [permeable] soft layer and separated from said second magnetically [permeable] soft layer with a second amagnetic layer.

30. (Amended) The transducer of claim 23, wherein said first magnetically [permeable] soft layer is substantially perpendicular to said second magnetically [permeable] soft layer.

31. (Amended) The transducer of claim 23, wherein said first magnetically [permeable] soft layer is substantially parallel to said second magnetically [permeable] soft layer.

33. (Amended) The transducer of claim 23, wherein said growth morphology of said second magnetically [permeable] soft layer is closer to parallel than perpendicular to said amagnetic gap layer.

34. (Amended) A transducer comprising:

a body having a surface and including a magnetically [permeable] soft loop including first and second yoke layers and first and second pole-tip layers, with said first pole-tip layer disposed adjacent said first yoke layer and said second pole-tip layer disposed adjacent said second yoke layer, said loop substantially encircling an electrically conductive coil section and terminating adjacent said surface in said pole-tip layers, said pole-tip layers being separated by an amagnetic gap layer, with said second pole-tip layer having a submicron width and being oriented substantially perpendicular to said amagnetic layer, and said second yoke layer containing a different material than said second pole-tip layer.

46. (Amended) A transducer comprising:

a magnetically [permeable] soft loop encircling an electrically conductive coil section and terminating adjacent said media in a magnetically [permeable] soft pole-tip, said pole-tip being formed on a wafer substrate along with more than five-hundred other pole-tips to have a width that is less than four hundred nanometers.

47. (Amended) An information storage system comprising:

a moving media,

a transducer disposed adjacent said moving media, said transducer containing a plurality of layers deposited on a wafer substrate, said layers including a magnetically [permeable] soft loop substantially encircling an electrically conductive coil section and terminating adjacent said media in a first magnetically [permeable] soft pole-tip layer and a second magnetically [permeable] soft pole-tip layer, with an amagnetic layer disposed between said pole-tip layers,

wherein a portion of said media adjacent to said transducer travels in a direction, and said second magnetically [permeable] soft layer is oriented substantially parallel to said direction.

48. (Amended) The system of claim 47, wherein said second magnetically [permeable] soft layer is substantially perpendicular to said amagnetic layer.

49. (Amended) The system of claim 47, wherein said second magnetically [permeable] soft layer has a width measured along said direction that is less than about three hundred nanometers.

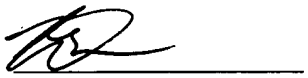
50. (Amended) The system of claim 47, wherein said second magnetically [permeable] soft layer contains a refractory metal.

51. (Amended) The system of claim 47, wherein said second magnetically [permeable] soft layer contains material having a B_s higher than that of Permalloy.

52. (Amended) The system of claim 47, wherein said second magnetically [permeable] soft layer consists essentially of sputtered material.

53. (Amended) The system of claim 47, further comprising a magnetoresistive sensor layer disposed adjacent said second magnetically [permeable] soft layer and oriented substantially perpendicular to said second magnetically [permeable] soft layer.

Respectfully submitted,



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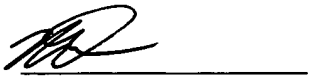

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